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Cumulative Impact

This is probably best illustrated by specific examples of the type of impact likely to be cumulative:

i) Oil or fuel-spills - there is a finite probability of such spills occurring and it is also reasonable to expect that this probability will increase along with the number of developments, number of transfers and the volumes ~~sent~~ to be involved. This impact is expected to be greatest in the outer delta area where the potential for damage is greater.

The outer Mackenzie Delta is important habitat for freshwater, coastal and marine fish which comprise the fish resources of much of the southern Beaufort Sea.

Nearshore areas are nursery, feeding and overwintering areas for both near and offshore fish - especially the anadromous species which form the basis of the domestic and commercial fish fishery (broad whitefish, cisco, ciscoe and inconnu). Fish tend to concentrate near Kendal Is. (dark cisco and broad and Jerry Is. (cisco and broad whitefish) during the summer. These areas then become even more sensitive in the fall when become aggregate for overwintering.

ii) Siltation - the effects of siltation in streams or rivers likely to result from pipeline crossings are usually temporary, but cumulative impact (where acute problems may become chronic) can occur when pipeline and highway crossings occur in the same area at more or less the same time.

iii) Eutrophication - wastes from individual activities being placed in lakes, channels or rivers may not be a problem when considered separately, but several developments in a discrete area with a specific drainage may cause concern. Geo-plants in the outer delta may afford examples of this type of cumulative impact when wastes, along with possible spill occurrences, end up in the vicinity of Kendal and Jerry Islands which are sensitive for the reasons I mentioned previously.

iv) Alteration of water-bodies - water-bodies are used in the

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water, and also as areas for waste disposal. Again, individual developments may put a relatively minor stress upon the environment in this regard, but several in the same area may exceed an overall damaging threshold.

As many future requirements as it is feasible to predict should be taken into account in determining this type of estuarine habitat utilization.

The DINA Assessment Group is attempting to come to grips with these problems of cumulative impact associated with the Delta Producers' applications.

W.B. Scott.